ZheJiang Libiao Robotics Co.,Ltd.

LBAP-102LU-900 Wireless Communication Device

Instruction Manual

V1.0

2018.7

Note: The picture of this manual is for reference only.

FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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Wireless Communication Device
Instruction Manual

1、Product Introduction

1.1 Product model description

LBAP-102LU-900: Corresponding to 902-928MHz

1.2 Product Usage

Wireless communication device is mainly used in automatic sorting system robot of our company, which is used for wireless communication between server equipment and robots, replacing the WIFI communication method of traditional robot.

The wireless communication device has an Ethernet interface supporting POE power supply and a USB interface inside , and the server can communicate with the device through a network or a USB interface, and then communicate with the client-side by wirelessly.

1.3 Product Features

Support POE power supply mode, convenient on-site wiring;

Compatible with USB interface;

Wireless communication distance is far;

Adopt dual module wireless communication module；

The product is stable and reliable.

1.4 Electrical Specification

1.4.1 working power supply

POE: 44 ~ 57V / 150mA；

USB:5V / 500mA；

1.4.2 Environmental requirements

a. Environmental pressure: 86 kPa～106 kPa

b. Environment temperature: -40℃～+85℃

c.Air relative humidity: 10% ～90%, relative humidity, no condensation (at＋25℃）；

d.Environment without significant shaking or violent shock vibration

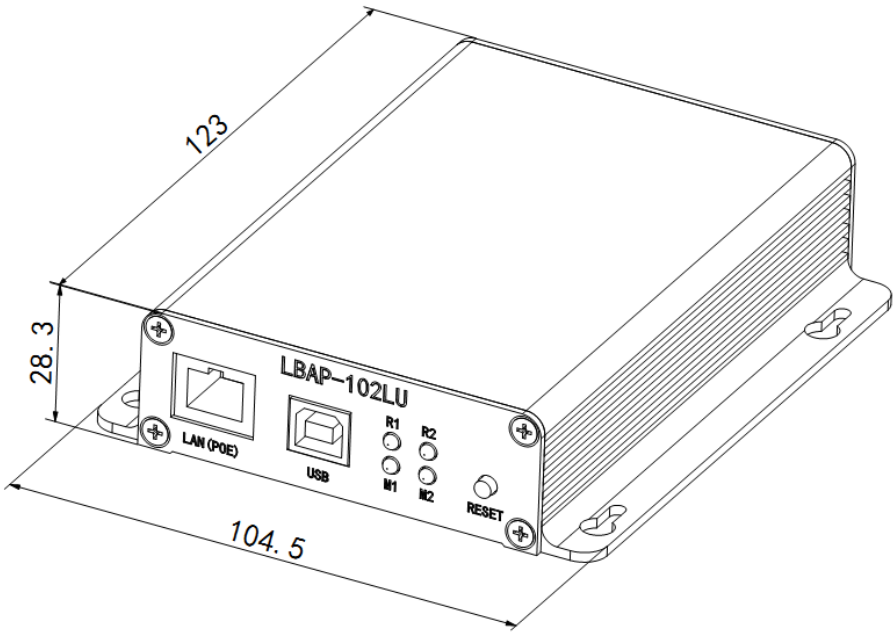
1.5 Electrical Parameter

Modulation	GFSK
Frequency Range	904.25-926.25MHz
Antenna Type	External Antenna
Antenna Gain	5.0dBi
Lowest Internal Frequency of EUT	8MHZ
MAX. Field Strength	Antenna 0:102.63dBuV/m Antenna 1:101.62dBuV/m

2、Product Structure and Composition

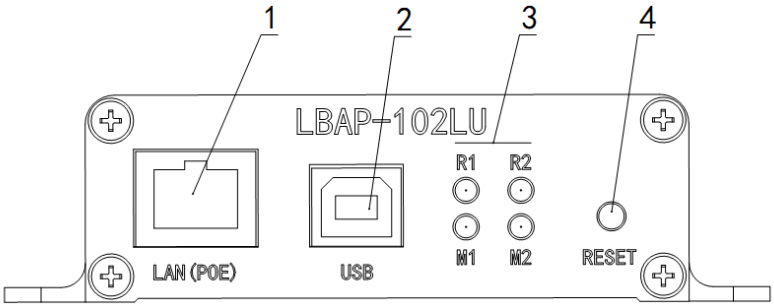
2.1 Product Appearance Structure and Size

As shown below， The picture 1 shows a wireless communication device，the size is 123mmx104.5mmx28.3mm.



Picture 1　Appearance structure of wireless communication device

2.2　Panel Wiring Instructions



Piture 2　Panel Wiring Instructions

As shown in the picture 2, the panel is shown as follows:

1. Thernet interface with POE power supply.

2. USB interface, connect to the computer.

3. LED indicating lamp

R1　The light is on, indicating that the wireless module 1 has received the data.

R2　The light is on, indicating that the wireless module 2 has received the data.

M1 The light is on, indicating that the network port receives the data.

M2 The light is on, indicating that the USB receives the data.

4. Reset botton (restore factory settings)

3、Product Usage Setting Instructions

3.1 Reset

As shown in picture 2, press the button to keep the four lights R1, R2, M1, M2 all on and then release, the device IP will be restored to the factory settings, the factory setting IP address is: 192.168.0.200;

3.2 Wired communication interface Instructions

Wireless communication devices can communicate using Ethernet or USB interfaces,which can only be communicated in one way at a time.

Support standard POE mode power supply when communicating with Ethernet interface.

Power is supplied directly from the USB when communicating with USB interface.

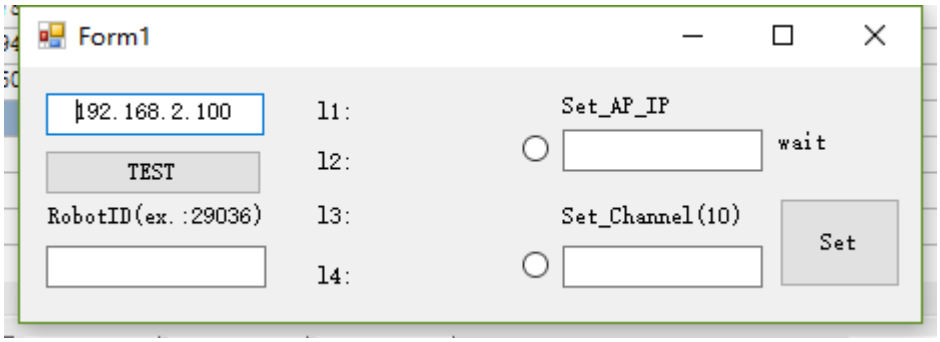
3.3 Antenna Connection

The wireless communication device has two built-in wireless modules, which can be configured with two external antennas,when the first module fails to communicate, it automatically switches to the second 0ne for communication to enhance the communication success rate and reduce the blind area of

communication.

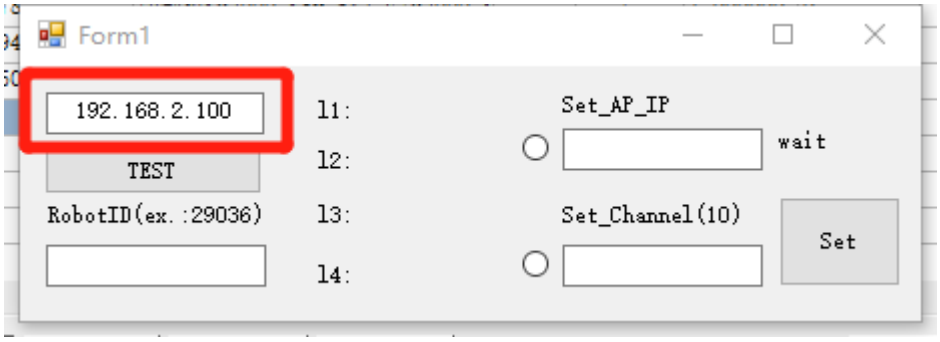
3.4 Device IP Settings instructions

Open the software APLoopback Test, as shown in the picture 3:



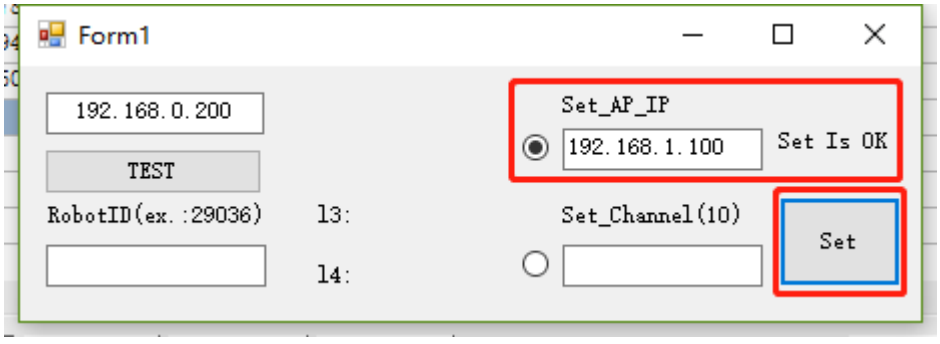
Picture 3

First ,change the IP address as shown in the picture 4 to the current IP address of the wireless communication device, for example, 192.168.0.200.



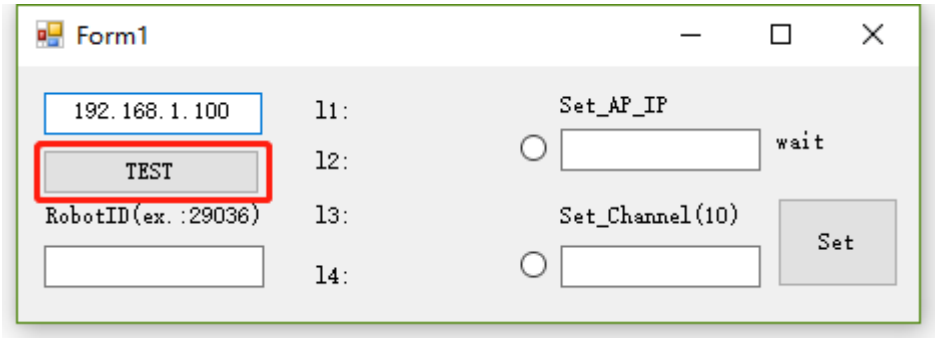
Picture 4

Enter the IP address you want to set as shown in the picture 5, for example, 192.168.1.100 , and then click to set , the display is successful, it's successful , if it fails, it shows no response .



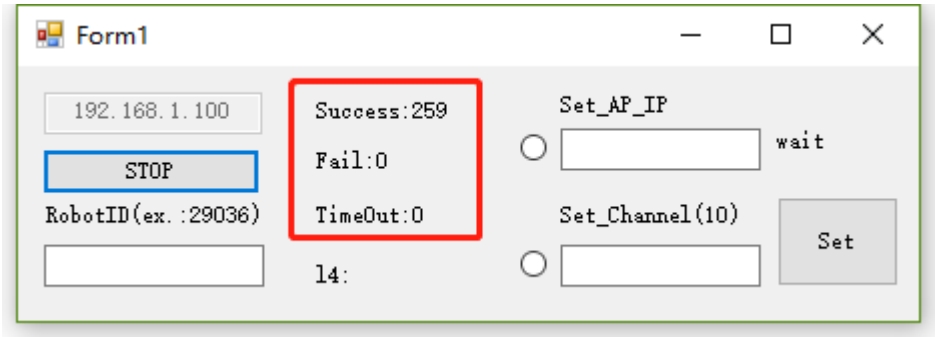
Pictur 5

You can use this software to test whether the IP address has been set successfully .Input the IP address you set into the picture box, and click to test. As shown in the picture 6.



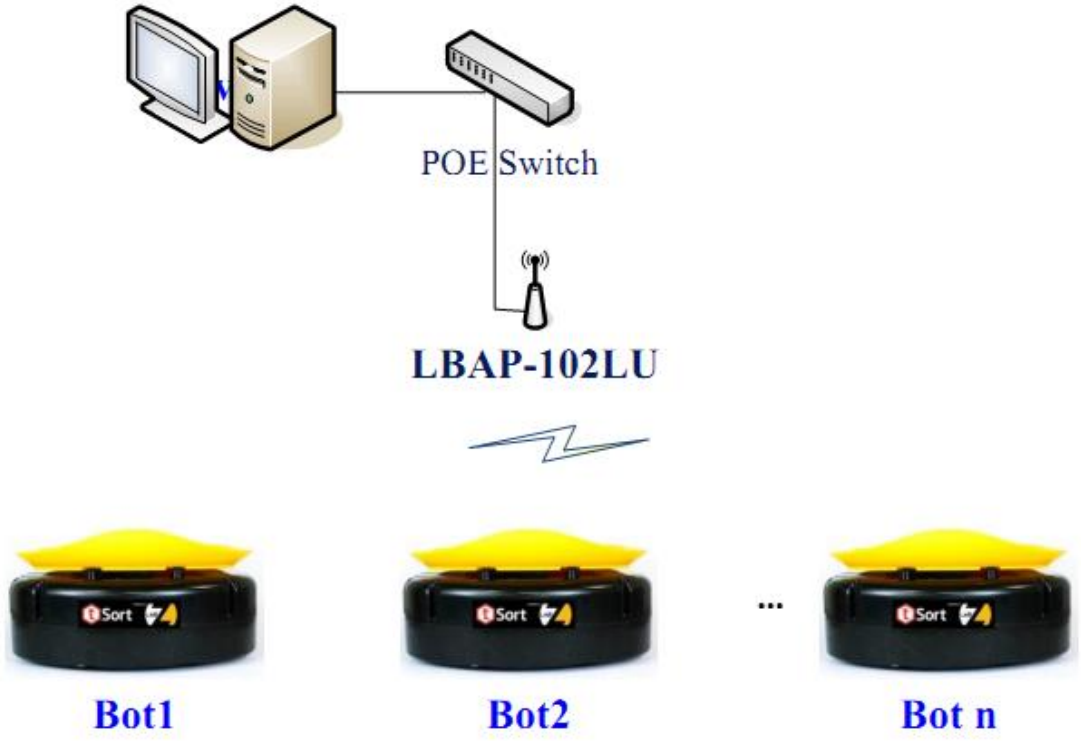
Piccture 6

If the display is successful, the setting is successful , if the display fails, the setting fails , if the display times out, it indicates that the communication is bad, as shown in the picture 7.



Picture 7

4、Minimum System Topology



Picture 8 Minimum system TOP diagram

As shown in the picture 8, the minimal system topology for Ethernet connections.

The server is connected to the wireless communication device through the POE switch, and the POE switch provides power support for the device while communicating with the wireless communication device.When the server needs to interact with the robot, the server communicates with the wireless network device through UDP, then the wireless network device transmits data through the wireless module and the wireless module on the robot, and then sends the data back to the server through the wired link for a link communication.

When it is necessary to expand device and increase wireless communication channels, it only needs to add wireless communication device.